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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,411	03/01/2004	Shuichi Hirukawa	204552031900	4974
25227	7590	01/31/2006		
MORRISON & FOERSTER LLP 1650 TYSONS BOULEVARD SUITE 300 MCLEAN, VA 22102			EXAMINER MENEFE, JAMES A	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,411	<b>Applicant(s)</b> HIRUKAWA ET AL	
	<b>Examiner</b> James A. Menefee	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                   |                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/1/04; 9/9/05</u> | 6) <input type="checkbox"/> Other: ____                                                |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to because Fig. 10 shows layer “503” above layer “504”. From p. 2 of the specification, layer 503 is a cladding layer, and 504 is a guide layer. From the overall context of the application, as well as what is typical in the art, it seems that the guide layer should be closer to the active layer and thus layer 504 should be above layer 503. Note also that applicant has specified that the layers are stacked in the order named, see p. 2 line 16, as further evidence that the numerals have been switched.

This may be remedied without changing the drawings by simply switching the references to “503” and “504” in the specification, p. 2 line 9. Otherwise, the drawings should be corrected in the following manner.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

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drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukunaga (US 6,195,373). See Fig. 1 and the discussion thereof unless otherwise noted.

Regarding claim 1, Fukunaga discloses a semiconductor laser comprising a GaAs substrate 1, an InGaAsP quantum well active layer 4 supported on the substrate, being composed of one or a plurality of well layers and a plurality of barrier layers alternately disposed (col. 6 lines 3-11), an n-type cladding layer 2 and a p-type cladding layer 8 provided so as to interpose the active layer therebetween, a first guide layer 3 provided between the n-type cladding and the active layer, a second guide layer 7 provided between the p-type cladding and the active layer, wherein the laser device may operate within the range of 760-800 nm (col. 8 lines 23-27), and the first guide layer 3 is InGaP. While the first guide layer is initially disclosed as  $\text{In}_{x2}(\text{Al}_{z2}\text{Ga}_{1-})$ .

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$z_2)_{1-x_2}As_{1-y_2}P_{y_2}$ , it is disclosed that  $y_2$  may equal 1 and  $z_2$  may equal 0, which would provide for the claimed material. See col. 3 lines 38-41, col. 4 lines 62-63.

Regarding claim 2, the upper guide layer includes upper guide layers 5,6; guide layer 6 may be AlGaAs. See col. 4 lines

Regarding claim 3, the guide layers may have thickness greater than 30 angstroms. Col. 5 lines 36-38.

Regarding claim 4, the first guide layer 3 is lattice matched to the substrate. Col. 5 lines 10-13.

Regarding claim 5, see the rejection of claim 2 above. Note that  $z_1$ , the Al content, may be any value within 0 and 1 inclusive therefore the limitation is met. See col. 3 lines 38-41.

Regarding claims 8 and 10, the wells may have compressive strain, and the barrier layers tensile strain. See col. 6 lines 3-11.

Regarding claim 12, the claim is the same as claim 1 except that the preamble indicates the intended use of the laser. If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999); *see also Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) ("where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is

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not a claim limitation"). Here, the preamble merely states the intended use of the laser, and thus is not accorded weight.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga. Fukunaga discloses the limitations of the parent claims, including that the well and barrier layers are strained, but is silent as to the amount of strain. However, it is known when such layers are strained for the strain to be small, that is below 3.5% as claimed, so that defects in growing the layers will be minimized. It would have been obvious to one skilled in the art to choose a strain in Fukunaga as claimed for this reason.

***Allowable Subject Matter***

Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

There is not taught or disclosed in the prior art a laser having the structure as in claim 1, where further there is an AlGaAs luminous shape stabilizer guide layer located as claimed.

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While Fukunaga discloses the limitations of parent claim 1, there is no motivation for one skilled in the art to add another lower guide layer as claimed.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All of these references show devices very similar to that described in claim 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James Menefee  
January 25, 2006